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COLLECTING UNIONIDÆ IN TEXAS AND LOUISIANA.

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In July, 1901, Dr. W. S. Strode, Mr. H. G. Askew, and the writer, took a trip through eastern Texas, collecting Unionidæ. Dr. Strode first took a "still hunt" on the Sabine river, at Loganport, where he duplicated the experience of the writer, the results of which have already been given the readers of NAUTILUS (xiii. 79). We met Mr. Askew at Sheperd, a small town northeast of Houston, and in close proximity to "Big creek," and Trinity river.

From Big creek we obtained a few *Lampsilis lienosus*. This shell had never before been obtained so far west, nor had it been listed as a Texas species by Mr. Singley. The Trinity river, though shallow at this time and place, was swift, with a sandy bottom, a combination not favorable to unio life, and we had therefore poor luck. We obtained some magnificent *Quadrula pauciplicata*: big, glossy, black and nearly devoid of plications. They were otherwise interesting on account of the females being gravid, an unusual condition in this group. It is a true *Quadrula* in this respect. Some very fine *Q. trapezoides* were also taken. They were remarkably compressed, and some of them were likewise gravid. They bore their young (or eggs) in all four gills. This we believe has never before been noted, and effectually places this species in the genus *Quadrula*, as defined by Mr. C. T. Simpson, who placed it here without having the advantage of seeing a gravid female. We captured a trio of *L. amphichænus*, which extends both the habitat and size of this remarkable species, one of them being $5\frac{1}{4}$ inches in length. (The writer has since obtained a dead shell from the upper Brazos river.) A fine

series of shells were found which are in my cabinet as yet unnamed. They seem to be a perfect connecting link between *Q. aurea*, *houstonensis*, and *pustulata*. We were fortunate enough to find a couple of *Q. chunii*, Lea. This is the river in which the types were obtained and the specimens were typical in every respect. This shell is a very rare species, and one sadly abused. Whenever a uniologist gets a shell belonging to the group headed by *Q. trigona*, and about whose name he is in doubt, he at once dubs it *Q. chunii*. I may be rather harsh on my brother uniologists, but these two shells are my only *chunii* to date.

The next day we were at Nacogdoches, Texas. Here we saw the celebrated "Stone Fort," an ancient structure over whose walls the flags of seven governments have floated. How many of my readers must plead guilty, as I did, of never having heard of the Republic of Fredonia?¹ The full history of this structure was given us by Mr.

¹In April, 1825, Hayden Edwards made a contract with the government of Mexico for the introduction of 800 families into Texas. They were to settle in the neighborhood of Nacogdoches, and be provided with lands under the general colonization law. The location proved unfortunate. Nacogdoches had been settled many years, partly by Mexicans and partly by a roving class of people who had a prejudice against the Anglo-Americans. When the colonists selected their lands and commenced improving, some older claimant would appear. The courts were appealed to, but would invariably decide in favor of the Mexican constituents. These conditions continued until finally (1826) the Mexican governor of the province decreed the annulment of the contract and the expulsion of Edwards and his brother from the territory. But Edwards had expended several thousand dollars in this enterprise, and his colonists too had expended considerable in building their homes. The Indians (principally Cherokees) also had settled near-by under the provisions of the colonization laws, and being greatly dissatisfied, allied themselves with the Edwards colonists, who, assuming the name of Fredonians, declared their independence of Mexico. They proceeded at once to organize a legislative committee composed of eight Americans and five Indians. Learning that Col. Bean was preparing to resist their movements, they took possession of the old stone fort. Norris, the deposed Mexican Alcalde, collected some friends and on Jan. 4, 1827, entered the town; they were attacked by the Americans and Indians and driven off with a loss of one killed and several wounded. The Fredonians were sadly disappointed in not receiving the co-operation of the Austin colonists, who joined the 200 soldiers sent from San Antonio to suppress the infant republic. Seeing the hopelessness of maintaining the Republic of Fredonia, Major Edwards and his forces retired across the Sabine into the United States and disbanded.

We are indebted to Mr. Askew for the above notes from Thrall's History of Texas.—EDITORS.

Askew, who is as loyal a son of Texas as ever drew breath. It is a shame to the town that this fort has been recently torn down and replaced by a sordid brick store. As soon as we had breakfasted, we went to the La Nana creek, where we obtained the new species, *Q. lananensis* recently described. We also obtained a number of the most deeply corrugated *Q. laticostata* we have yet seen. A solitary *Obovaria castanea* was taken. Numbers of *Tritogonia tuberculata* were found, but much to our disappointment, not a single gravid female was noted. (This species has not as yet been observed in that condition.) In this creek we obtained some *L. nigerrimus* and *Strophitus edentulus*, neither of which was listed by Mr. Singley. While cleaning up our catch in the hotel yard, we were joined by an intelligent-looking party who gravely asked if the "fossils" we were cleaning belonged to the Devonian formation! I shall never forget the guileless look of the doctor, as he gravely replied that they *did*.

By high noon next day we were at Rockland on the Neches river; we had taken our dinner, and by 5 p. m. were loaded with all the unios we wanted. This place is the metropolis of *Q. askewii*, of which some examples require a "Philadelphia lawyer" to differentiate from *Q. beadleanus*. The unios of this river are precisely the same as in the Sabine river. We obtained some *bona-fide* *Q. nodifera*, a species of the validity of which we had had doubts, but these are now forever laid aside. From Rockland we then took flight towards Lake Charles (Louisiana). En route we were compelled to stop over at Beaumont, Texas; while there we were fortunate enough to witness the striking of oil by one of the wonderful "gushers" of that place. It was a grand sight, the memory of which will never leave us. Lake Charles we found to be a shallow expansion of the Calcasieu river, about two miles wide, with sandy bottom, and covered by floating masses of the "Water Hyacinth," acres and acres of them. Calcasieu river is an extraordinary stream; for fifty miles it is sixty feet deep and a quarter of a mile wide, with no current excepting after rains, and not a shoal or sand-bar. The salt water comes up 40 or 50 miles during storms, and kills most of the fresh-water shells.

Those left alive were the following: *Q. apiculata* (typical), *Q. mortoni*, *L. texasensis*, *L. hydiana*, *L. anodontoides*, *Q. trapezoides*, variety *pentagonoides* (new var.), and finally *Glebula rotundata*. I have in my cabinet two specimens of fresh water mussels (*Unio*)

having growing on them a shell of the salt water mussel (*Mytilus*); both host and mess-mate were alive when taken.

The *G. rotundata* were unusually fine, the shades of color exhibited by them I have never seen excelled. These were otherwise interesting as a number of them were gravid, and we felt all the importance of being true discoverers, as no student had ever before noted them in this condition. As regards this part of their physiology they are a true *Lampsilis*. The possession however of several unique characteristics will probably keep them in a separate genus.

Mention was made above of a new variety of *Q. trapezoides*. This shell differs from the type in having its dorsum very much arched or bent midway. The posterior is widely biangulated. The anterior is singularly truncated like *W. coruscus*, Gld. The effect being that the outline forms nearly an equilateral pentagon, hence the name. Aside from its form, it differs in being much smaller, and frequently entirely devoid of plication on either its sides or posterior slope. A striking peculiarity is that the posterior end of the ligament is perpendicularly over the centre of the base, whereas in the ordinary *trapezoides* the end is situated about three-fourths of the distance from the anterior to the posterior.

LIST OF SHELLS COLLECTED ON SAN MARTIN ISLAND, LOWER CALIFORNIA, MEXICO.

BY FRED. BAKER, M. D.

Loligo sp? Giant squid.	Monoceros lugubre Sby.
Cavolina tridentata Gmel.	Marginella regularis Cpr. 30 fathoms.
Cerostoma nuttalli Cour.	Marginella jewettii Cpr. Drift.
Ocenebra circumtexta Stearns.	Marginella pyriformis Cpr.
Ocenebra gracillima Stearns.	Volvarina varia Sby. Drift.
Ranella californica Hds. 30 fathoms.	Olivella biplicata Sby.
Fusus luteopictus Dall. On breakwater at low tide.	Astyris gouldi Cpr. 30 fathoms.
Macron kellestii A. Ad.	Astyris aurantia Dall.
Macron lividus A. Ad.	Astyris gausapata Gld.
Nassa fossata Gld.	Astyris carinata, var. hindsii Rve.
Nassa perpinguis Hds.	Astyris tuberosa Cpr.
	Anachis penicillata Cpr.